

102221-1244550

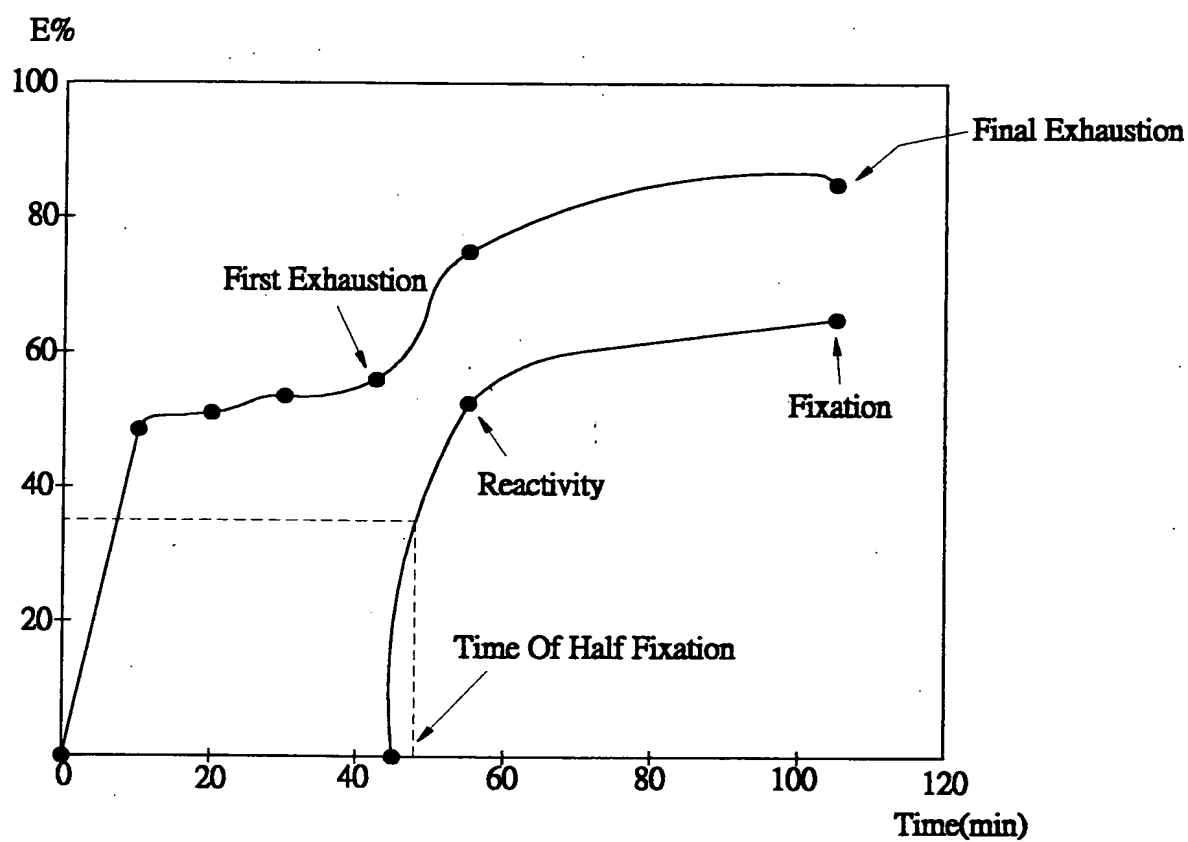


FIG.1

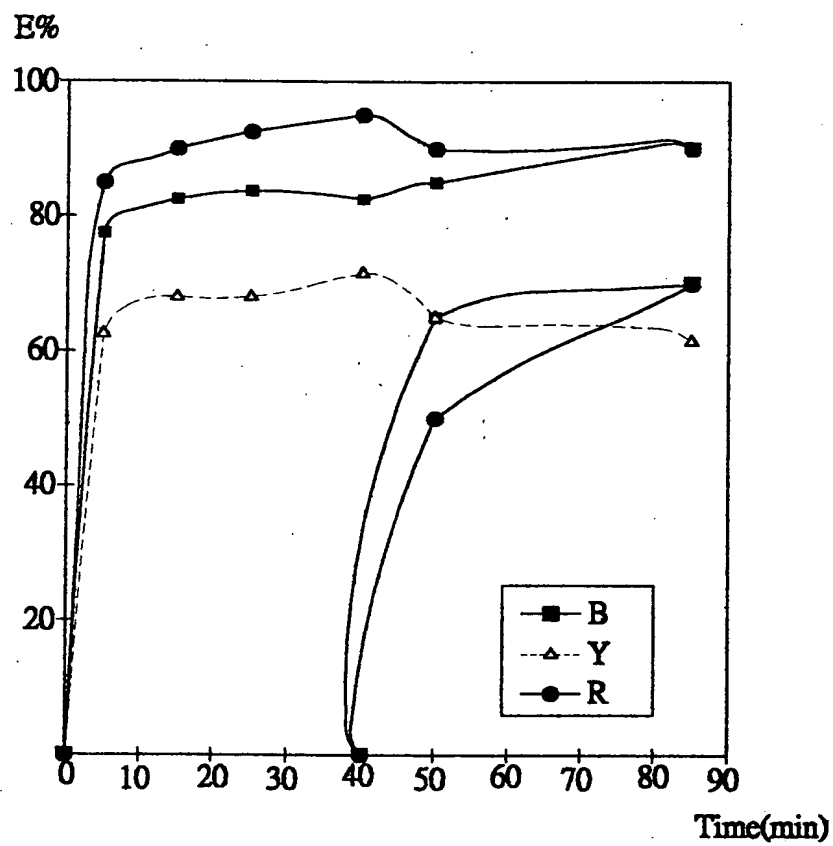


FIG.2

Time (min)	E% (Condition B)	E% (Condition Y)
0	0	0
10	80	70
20	85	75
30	82	72
40	84	72
55	90	78
105	95	85

FIG.3

20250327

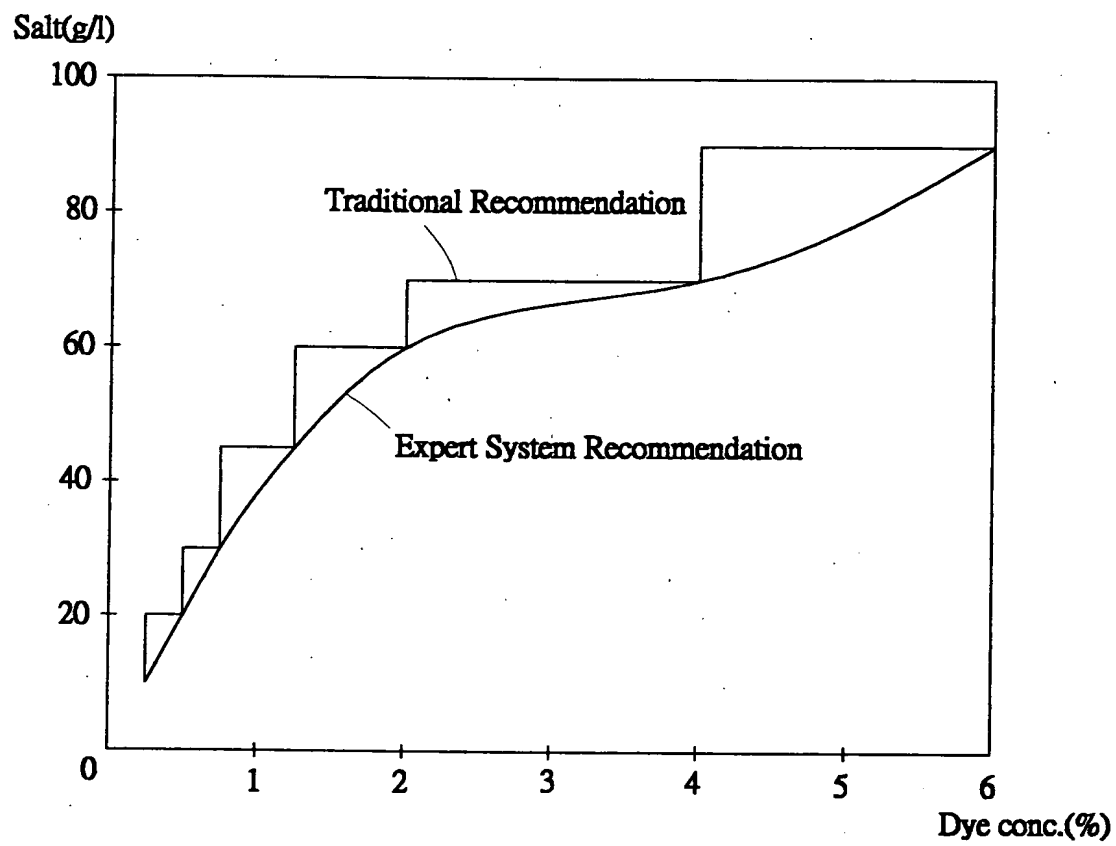


FIG.4

The graph plots Alkali concentration in g/l (Y-axis, 0 to 25) against Dye concentration in % (X-axis, 0 to 5). Two recommendations are shown:

- Traditional Recommendation:** A step function. It starts at 10 g/l for 0-0.5% dye, jumps to 15 g/l for 0.5-2% dye, and jumps to 20 g/l for 2-4% dye.
- Expert System Recommendation:** A smooth, continuous curve starting at (0, 10) and increasing to (4, 20).

Dye conc. (%)	Traditional Recommendation (g/l)	Expert System Recommendation (g/l)
0.0	10	10.0
0.5	15	10.5
1.0	15	11.5
1.5	15	12.8
2.0	20	14.5
2.5	20	16.5
3.0	20	18.0
3.5	20	19.2
4.0	20	20.0

FIG.5

Dyestuff Database

name Cibacron Blue F-R

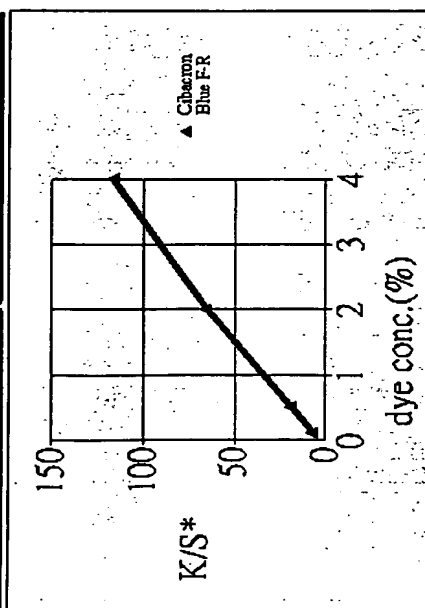
counts : 29

type

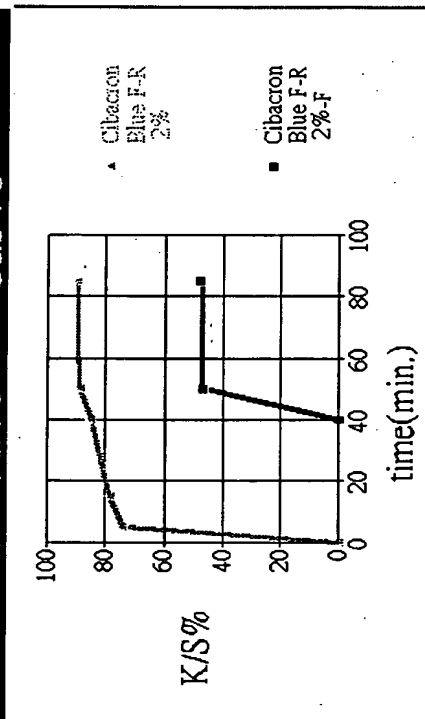
60°C

choose conc. menu end

build-up curve



exhaust curve



dye build-up and feature parameters

depth	1st exhaustion	final exhaustion	fixation	reactivity	hal
7.23	87.64091	87.02986	63.11192	101.6598	4
18.88	84.11723	88.24448	46.3824	97.8284	5
65.9	85.0425	90.06641	47.98203	98.17905	5
116.3	70.39645	84.78133	43.34097	91.48753	5

FIG. 6

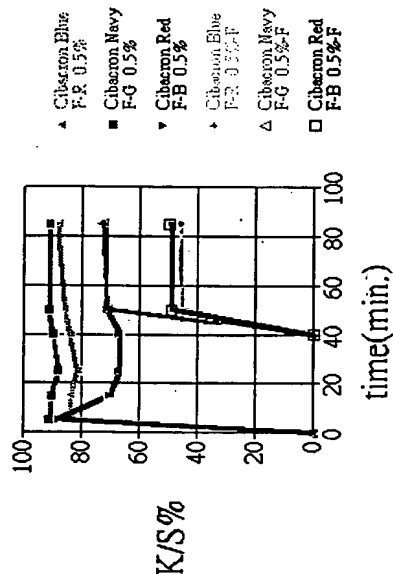
China Textile Institute~The Compatibility of dye combination

The Compatibility of dye combination

type of dyes 60°C

exhaust curve

recipe	conc. (%)
Cibacron Blue F-R	0.5
Cibacron Navy F-G	0.5
Cibacron Red F-B	0.5
Na2SO4	40
Na2CO3	15



compatibility index

std process

migr process

Lab Process

96.8%
good

go

menu

end

fabric cotton knitted

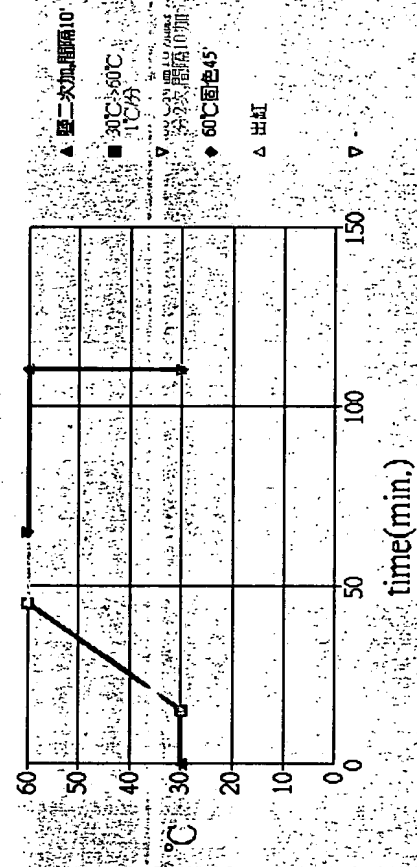


FIG. 7

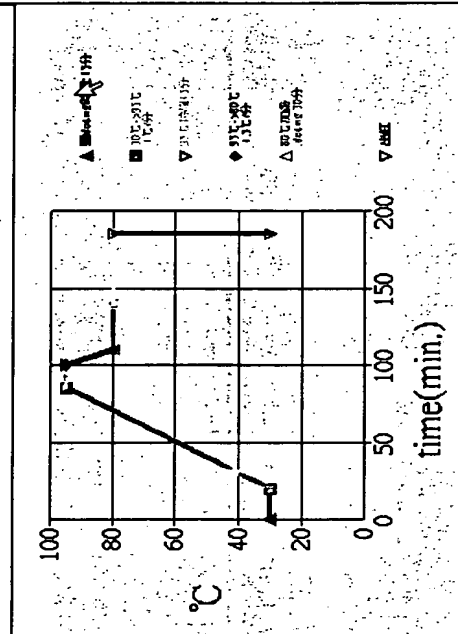
Process Optimization

- Dyeing Condition menu end

woven kint dye type 80°C c std process c migr process optimization

specification	width(in)	dyeing	recipe
tricot	70	Evercion Blue H-EGN 125%	0.5 %
		linear wt. (g/y)	0.5 %
	200	Evercion Navy Blue H-ER	0.5 %
		total wt. (kg)	50 g/l
	700	Na2CO3	20 g/l

m/c No.	cap. (kg)	nozzle : 85mm
DH-1	360	fabric speed : 350y/min.
type	tubes	3batch(loading rate 64.%)
JetFlow	2	cycle time : 3.33min.
fabric speed(y/min.)	loading rate(%)	dyeing time : 185. min.
max. 450	max. 80	
optim 350	optim 60	
min. 200	min. 30	



fabric cotton knitted	cycle time(s) 200	save
-----------------------	-------------------	------

FIG. 8

Recipe Optimization

type of dyes	std LR	used LR
60°C	10	20

recipe	conc. (%)	conc. (%)
Cibacron Blue F-R	1	1

Cibacron Navy F-G	1	1
-------------------	---	---

Cibacron Red F-B	1	1
------------------	---	---

Na2S04	50. g/l	65.1 g/l
--------	---------	----------

Na2C03	18. g/l	18. g/l
--------	---------	---------

normal
optimal
specified

specified

menu

end

liquor ratio dependency

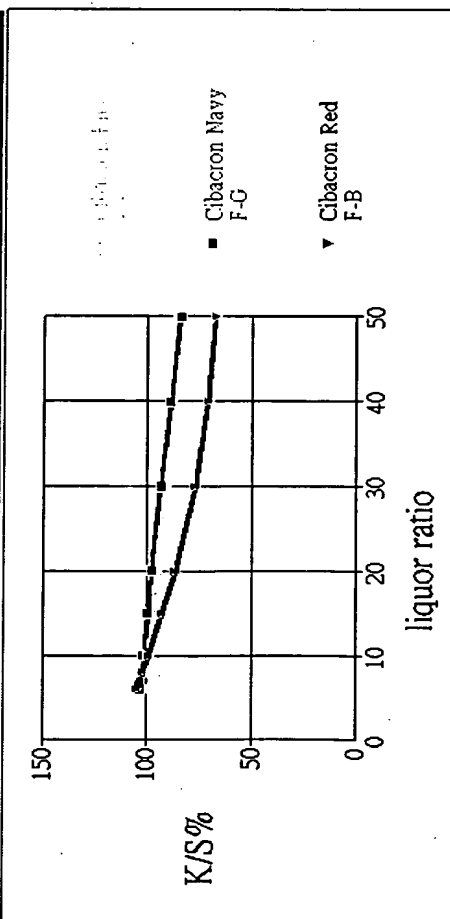


FIG. 9